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10/805,945	03/22/2004	Kyle G. Brown	RSW920040006US1	1046
51016 7590 12/21/2007 IBM CORP. (RALEIGH SOFTWARE GROUP) c/o Rudolf O Siegesmund Gordon & Rees, LLP 2100 Ross Avenue Suite 2800 DALLAS, TX 75201				
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WILLIAMS, CLAYTON R				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/805,945

Applicant(s)

BROWN ET AL.

Examiner

CLAYTON WILLIAMS

Art Unit

4152

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/22/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03/22/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 03/22/04.

DETAILED ACTION

1. Claims 1-16 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Todd, US 6,510,429 (hereinafter Todd).

For claim 1, Todd discloses:

An enhanced publish/subscribe messaging system (Abstract) comprising: a message server (col. 5, lines 20-23, teaches publisher unit 11 and messaging and queuing unit 12); a computer connected to the message server by a network and having a memory containing a subscription program (col. 5, lines 45-50, relational message broker serves role of managing subscriptions, among other processing tasks), a publication program (col. 5, lines 11-13, publisher data processing unit 11), and a message delivery program (col. 5, lines 46-50, function of the queue manager to deliver

messages to the subscriber); a topic in memory of the message server wherein a plurality of subscribers use the subscription program to select a plurality of subscriptions associated with the topic (col. 5, lines 11-13, disclosure of message server tracking subscriptions by topic, i.e. stocks in this case); wherein, responsive to a publisher publishing a message to the topic, the publishing program sends a copy of the message to each subscription (col. 6, lines 62-66, publisher sends stream of topical information to message broker), and the message delivery program sends a single message to each subscriber within a subscription (col. 7, lines 9-17, the message broker send published messages to subscribers, optionally the messages may be subjected to filtering by filter node 21 before receipt by subscribers).

For claim 2, Todd discloses:

The enhanced publish/subscribe messaging system of claim 1, wherein the message server is Java.TM message service (JMS) compliant (col. 5, lines 20-23, IBM MQSeries is well-known java messaging service compliant platform, i.e. Sandholm et. al discloses that MQSeries is JMS message queuing compliant, pg. 10, section 11.1).

For claim 3, Todd discloses:

The enhanced publish/subscribe messaging system of claim 1, wherein the message server is a Java.TM virtual machine (col. 5, lines 20-23; IBM MQSeries, also known as IBM WebSphere, is a well-known messaging program which employs java virtual machine, i.e. Davis et al., US 7,127,713, col.7, lines 48-51).

For claim 4, Todd discloses:

The enhanced publish/subscribe messaging system of claim 1 wherein the message delivery program further comprises a subscription dispatcher (col. 5, lines 45-50, the broker 13 handles this role).

For claim 16, Todd discloses:

A message delivery system (Abstract) comprising:

a publish/subscribe message system (col. 5, lines 11-13) comprising:

a network (col. 5, lines 20-23);

a plurality of publishers connected to the network (col.5, lines 11-13) ;

a plurality of subscribers connected to the network (col.5, lines 11-13);

a first program in the memory of a computer connected to the network

wherein the first program provides a one-to-many notification system where a message published by a publisher is received by all of the plurality of subscribers (col. 6, lines 62-65), and wherein each of the plurality of subscribers specify which notifications are of interest by subscribing to a topic for that interest (col. 5, lines 11-13), and where the plurality of publishers notify an interested subscriber by publishing to the topic for that interest (col. 6, lines 62-65);

a second program that modifies the first program to include a subscription program so that each of the plurality of subscribers may select one or more of a plurality of subscriptions associated with the topic (col. 5, lines 11-13, subscribers

show interest in particular topics by subscribing); and also to provide a message delivery program that sends a single message to each subscriber within a subscription (col. 6, lines 62-65).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-6 and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd, as applied to claims 1 and 4, in view of Wang et al., US 2003/0227894 (hereinafter Wang), and further in view of Montero, US 2003/0120720 (hereinafter Montero).

For claim 5, Todd discloses:

“The enhanced publish/subscribe messaging system of claim 4”.

Todd does not disclose “wherein the subscription dispatcher further comprises instructions for choosing one subscriber out of a plurality of subscribers sharing a subscription to receive a message wherein such instructions are arbitrary.

However, Wang discloses an Application Management System 100 that manages the interaction of a publisher VASP 82 with subscribers 96. AMM 120 can promote or demote the deployment of published messages ([0022], lines 9-12). As well, VASP interface 210 and operator interface 230 can be used to configure network policies such as service level agreements, message throttling and load-balancing ([0026] and [0029]). Todd and Wang are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd with Wang, a system for managing a publisher-subscriber network which includes management modules for modifying the deployment of messages, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd and Wang does not specifically disclose the dispatch of a message to as few as one subscriber out of a plurality. However, Montero discloses a dynamic topic partitioning system 120 that intercepts publisher 102 postings and randomly assigns them to one or more subtopics, subtopics which have been assigned to one or more subscribers ([0023]). Todd, Wang and Montero are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd and Wang with Montero, a dynamic topic partitioning system, because message brokering systems which curtail delivery of messages to limited recipients

lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

For claim 6, the combination of Todd, Wang and Montero discloses:

The enhanced publish/subscribe messaging system of claim 4 wherein the subscription dispatcher further comprises instructions for choosing one subscriber out of a plurality of subscribers sharing a subscription to receive a message wherein such instructions are configurable by a system administrator (Wang, [0026] and [0029], disclosure of system administration modules for subscriber dispatcher).

For claim 10, Todd discloses:

A message system servicing (Abstract; fig. 1) method comprising the steps of:
at a subscriber computer connected to a server computer by a network,
subscribing to a topic wherein the subscription is shared with a plurality of other subscribers (col. 5, lines 11-13);

at the server computer, publishing a message to the topic (col. 5, lines 11-13);

receiving the subscription (col. 5, lines 45-53, relational message broker 13 handles the actual assignment of messages to particular subscribers before handing off message to queue manager 12);

sending a message to the subscription (col. 5, lines 45-53, queue manager 12 handles actual delivery of messages)

Todd does not disclose "delivering the message to a subscriber chosen out of a plurality of subscribers by a message delivery program having a subscription dispatcher".

However, Wang discloses an Application Management System 100 that manages the interaction of a publisher VASP 82 with subscribers 96. AMM 120 can promote or demote the deployment of published messages ([0022], lines 9-12). As well, VASP interface 210 and operator interface 230 can be used to configure network policies such as service level agreements, message throttling and load-balancing ([0026] and [0029]). Todd and Wang are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd with Wang, a system for managing a publisher-subscriber network which includes management modules for modifying the deployment of messages, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd and Wang does not specifically disclose the dispatch of a message to as few as one subscriber out of a plurality. However, Montero discloses a dynamic topic partitioning system 120 that intercepts publisher 102 postings and randomly assigns them to one or more subtopics, subtopics which have been assigned to one or more subscribers ([0023]). Todd, Wang and Montero are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd and Wang with Montero, a dynamic topic partitioning system, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

For claim 11, the combination of Todd, Wang and Montero discloses:

A computer program product, stored on a computer readable storage medium for, when run on a computer system, instructing the computer system to carry out the method (Todd, col. 5, lines 20-23, disclosure of messaging and queuing unit running IBM MQseries software) of claim 10.

For claim 12, Todd discloses:

A machine readable storage medium having stored thereon a computer program (Todd, col. 5, lines 20-23), said computer program comprising a routine set of instructions for causing the machine to perform the steps of :

receiving a subscription to a topic from a plurality of subscribers (Todd, col. 5, lines 11-13, disclosure of message server tracking subscriptions);

publishing a message to the topic (Todd, col. 5, lines 11-13);

sending the message to the subscription (Todd, col. 5, lines 45-50, disclosure of subscription program);

Todd does not disclose the preamble recitation that this computer program is “for performing load balancing within message system servicing”. Nor does Todd disclose the limitation “delivering the message to a subscriber chosen out of a plurality of subscribers by a message delivery program having a subscription dispatcher”.

However, Wang discloses an Application Management System 100 that manages the interaction of a publisher VASP 82 with subscribers 96. AMM 120 can promote or demote the deployment of published messages ([0022], lines 9-12). As well, VASP interface 210 and operator interface 230 can be used to configure network policies such as service level agreements, message throttling and load-balancing ([0026] and [0029]). Todd and Wang are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd with Wang, a system for managing a publisher-subscriber network which includes management modules for modifying the deployment of messages, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd and Wang does not specifically disclose the dispatch of a message to as few as one subscriber out of a plurality, i.e. load balancing. However, Montero discloses a dynamic topic partitioning system 120 that intercepts publisher 102 postings and randomly assigns them to one or more subtopics, subtopics which have

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been assigned to one or more subscribers ([0023]). Todd, Wang and Montero are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd and Wang with Montero, a dynamic topic partitioning system, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

For claim 13, Todd discloses:

An enhanced publish/subscribe message system (Abstract) comprising:

- a computer implemented network (col. 5, lines 20-25, disclosure of queue manager 12, publisher unit 11 and subscriber unit 15 being separate entities on network);
- a publisher connected to the network (col. 5, lines 21-23);
- a plurality of subscribers connected to the network (col. 5, lines 23-26; Fig. 1, depiction of subscriber unit);
- a means for publishing a message to a topic (col. 5, lines 11-13);
- a means for the plurality of subscribers to subscribe to the topic (col. 5, lines 11-13);
- a means for sending a message to the subscription (col. 5, lines 45-53)

Todd does not disclose:

wherein the message is only received by a single selected subscriber within a

subscription; and

wherein the decision as to which subscriber is the selected subscriber is made by a message delivery program having a subscription dispatcher.

However, Wang discloses an Application Management System 100 that manages the interaction of a publisher VASP 82 with subscribers 96. AMM 120 can promote or demote the deployment of published messages ([0022], lines 9-12). As well, VASP interface 210 and operator interface 230 can be used to configure network policies such as service level agreements, message throttling and load-balancing ([0026] and [0029]). Todd and Wang are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd with Wang, a system for managing a publisher-subscriber network which includes management modules for modifying the deployment of messages, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd and Wang does not specifically disclose the dispatch of a message to as few as one subscriber out of a plurality, i.e. load balancing. However, Montero discloses a dynamic topic partitioning system 120 that intercepts publisher 102 postings and randomly assigns them to one or more subtopics, subtopics which have been assigned to one or more subscribers ([0023]). Todd, Wang and Montero are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd and Wang with Montero, a dynamic topic partitioning system, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

For claim 14, the combination of Todd, Wang and Montero discloses:

The enhanced publish/subscribe message system of claim 10 wherein the subscription dispatcher is contained within the message delivery program (Todd, col. 5, lines 46-50, relational broker 13 handles message dispatching, lines 57-60, disclosure of broker operating in synchronous mode obviating need of queue manager 12)..

For claim 15, the combination of Todd, Wang and Montero discloses:

The enhanced publish/subscribe message system of claim 10 wherein the subscription dispatcher is a separate program that is invoked by the message delivery program (Todd, col. 5, lines 46-50, relational broker 13 and queue manager 12 operating in concert to deliver messages).

6. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Todd, as applied to claims 1 and 4, in view Cabrera et al., US 2003/0229674 (hereinafter Cabrera).

For claim 7, Todd discloses:

“The enhanced publish/subscribe messaging system of claim 4”.

Todd does not disclose “wherein the subscription dispatcher further comprises instructions for choosing one subscriber out of a plurality of subscribers sharing a subscription to receive a message wherein such instructions are generated in response to data received by monitoring subscriber activity within the messaging system”.

However, Wang discloses an Application Management System 100 that manages the interaction of a publisher VASP 82 with subscribers 96. AMM 120 can promote or demote the deployment of published messages ([0022], lines 9-12). As well, VASP interface 210 and operator interface 230 can be used to configure network policies such as service level agreements, message throttling and load-balancing ([0026] and [0029]).

Todd and Wang are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd with Wang, a system for managing a publisher-subscriber network which includes management modules for modifying the deployment of messages, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd and Wang does not specifically disclose the dispatch of a message to as few as one subscriber out of a plurality. However, Montero discloses a

dynamic topic partitioning system 120 that intercepts publisher 102 postings and randomly assigns them to one or more subtopics, subtopics which have been assigned to one or more subscribers ([0023]). Todd, Wang and Montero are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Todd and Wang with Montero, a dynamic topic partitioning system, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd, Wang and Montero does not disclose "wherein such instructions are generated in response to data received by monitoring subscriber activity within the messaging system." However, Cabrera discloses subscription managers 306 exchanging status messages and the subsequent analysis of this data and adjustments to the network by subscription routing policy 304 ([0038], lines 1-5).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Todd, Wang and Montero with Cabrera, a scalable publishing system that may be reconfigured in response to changing network conditions, because a dynamically adjusting publishing network can compensate for changing network conditions.

For claim 8, Todd discloses:

"The enhanced publish/subscribe message system of claim 1".

Todd does not disclose "wherein the message delivery program includes the capability to automatically and transparently redirect requests from a failed subscriber to another subscriber selected out of the subscribers sharing the subscription; and wherein the failed subscriber is a subscriber having a problem with or shut down of its database, server or network".

However, Wang discloses an Application Management System 100 that manages the interaction of a publisher VASP 82 with subscribers 96. AMM 120 can promote or demote the deployment of published messages ([0022], lines 9-12). As well, VASP interface 210 and operator interface 230 can be used to configure network policies such as service level agreements, message throttling and load-balancing ([0026] and [0029]).

Todd and Wang are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify Todd with Wang, a system for managing a publisher-subscriber network which includes management modules for modifying the deployment of messages, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd and Wang does not specifically disclose the dispatch of a message to as few as one subscriber out of a plurality. However, Montero discloses a dynamic topic partitioning system 120 that intercepts publisher 102 postings and

randomly assigns them to one or more subtopics, subtopics which have been assigned to one or more subscribers ([0023]). Todd, Wang and Montero are analogous art because both are from the field of message brokering.

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Todd and Wang with Montero, a dynamic topic partitioning system, because message brokering systems which curtail delivery of messages to limited recipients lower network congestion and load on messaging network (Montero, [0019], lines 12-14).

The combination of Todd, Wang and Montero does not disclose a system generating instructions for subscription dispatch based on monitoring of subscriber activity in the system. However, Cabrera discloses subscription managers 306 exchanging status messages and the subsequent analysis of this data and adjustments to the network by subscription routing policy 304 ([0038], lines 1-5).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Todd, Wang and Montero with Cabrera, a scalable publishing system that may be reconfigured in response to changing network conditions, because a dynamically adjusting publishing network can compensate for changing network conditions.

Finally, Chesnais further discloses a message delivery system with a MM module which monitors for message delivery errors to subscribers (col. 10, lines 54-64). Chesnais teaches a system which can redirect requests from a failed subscriber to

another. Todd, Wang, Montero and Chesnais are analogous art because both are from the field of message brokering and delivery.

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Todd, Wang and Montero with Chesnais, a message routing system that monitors status of message delivery, because message brokering systems that monitor status of message delivery necessarily allow for greater quality of service and message delivery guarantees.

For claim 9, the combination of Todd, Wang, Montero and Chesnais discloses:

The enhanced publish/subscribe messaging system of claim 1 wherein the message delivery program further comprises a capability to automatically alter the rules (Wang:[0022], lines 9-12, [0026], [0029]) within the subscription dispatcher in response to data received by monitoring the message distribution system (Cabrera: ([0038], lines 1-5 and Chesnais: col. 10, lines 54-64).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Campbell et al., US 6,240,451: An information distribution program for automatically distributing information over a network.
- b. Gupta et al., US 6,577,599: A method and apparatus for efficient and reliable multicasting in a network environment
- c. Jannu et al., US 7,152,094: A brokering system, which broker messages between middleware computing products
- d. Knapman et al., US 6,298,455: A broker network which has software unit for determining a failure of a neighboring broker>

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLAYTON WILLIAMS whose telephone number is (571)270-3801. The examiner can normally be reached on M-F (8 a.m. - 5 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on 571-272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRW
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/Nabil El-Hady/
Supervisory Patent Examiner, Art Unit 4152